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NOAA Restoration Center

San Francisco Bay Oyster Restoration

Project Description

The Institute for Fisheries Resources wishes to restore a self-sustaining population of native oysters and create a mixed shellfish aggregation similar to those which created the historic San Francisco Bay shellfish reefs.

Project Nickname	San Francisco Bay Oyster (RC-99)		
Location	Redwood City, San Mateo County, CA, 94063 SWR		
Program	Community-based Restoration	**Congressional District**	CA 12, 14
Lat, Long Coordinates	-122.2608, 37.5741	**Land Ownership**	Public
Implementation Start Date	01-APR-99	**Implementation End Date**	31-MAR-00
River Basin	San Francisco Bay	**HUC**	
Geographic Identifier	San Francisco Bay	**USGS Topo Quad**	San Mateo
Project Status	Implementation Complete	**Project Type**	Restoration
Project Status Description	A Final report and manuscript were completed in March 2000. The manuscript titled "16s ribosomal DNA verifies that native oyster (Ostrea lurida) persists in San Francisco Bay" This was prepared for IFR by Dr. Michael Banks of the University of California's Bodega Marine Lab.		
Landmark	immediately north and south of the San Mateo bridge.		
Number of Volunteers	48	**Volunteer Hours**	600
Volunteer Description	Volunteer time was used to collect the oyster samples and help process the data.		
Proposed Project?		**Project Closed?** Y	**FY Completed** 2000

Habitat Information

Type	Acres Created	Acres Re-established	Acres Rehabilitated	Acres Enhanced	Acres Protected	Stream Miles	# Plants/ Animals
oyster reef			1				

Species Information

Commonname	Genus	Species	Population Name	NMFS Status	Species Type
Oyster, olympia	*Ostrea*	*conchaphila*			animal
Oyster, eastern	*Crassostrea*	*virginica*			animal

Partners

- California Coastal Conservancy
- US Real Estate Investments, Ltd.
- The Packard Foundation
- University of California's Bodega Marine Laboratory
- California Department of Fish and Game

Restoration Techniques

- oyster reef construction
- oyster gardening

Contacts

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NOAA Involvement

- source of funding

Monitoring Information

Characteristic	Type
Fauna production rates	Functional

Additional Info

water quality- add parameters; genetic analysis of oysters

Funding Information

Funding Mechanism	FY Awarded	NOAA Contribution	Partnership Contributio	Total Partnership Contribution
NOAA Restoration Center	1999	$2,500	$0	$2,500
TOTALS		$2,500	$0	$2,500

Other Non-Federal $ $79,527 **Other Federal $** $0 **Total Project Cost** $82,027

Funding Recipient Institute for Fisheries Resources

Funding Comments

Project Abstract

The small, slow-growing Olympia oyster is native to San Francisco Bay and the West Coast. By the early 1900's, it had disappeared from the bay, and replaced by the mid-size Eastern oyster from the Atlantic seaboard. Before the Gold Rush (1849), there were one or more species of native oyster in San Francisco Bay. Thousands of acres of oyster beds were cultivated on bay tidal flats during the end of the 19th century. Since then, the Bay's aquatic habitats have been severely degraded by the cumulative effects of sedimentation, dredging, filling, domestic and industrial pollution, and an influx of exotic flora and fauna. Only tiny relict groups of oysters can be found in the Bay today - but none occupy the remarkable shellfish reefs that once graced the warm, protected reaches of the south Bay. Since the 1960's, however, federal, State, regional and local governments have invested heavily in cleaning up the waters of the Bay. In the early 1980's, the California Department of Fish and Game demonstrated that spat of eastern and Pacific oysters, those readily available from shellfish nurseries, can be grown successfully in the Bay's waters. The recent discovery of small colonies of Ostreola conchaphila - the native San Francisco Bay oyster, as well as shell reefs near Bair Island and the improved water quality of the Bay, reveals that oysters could once again flourish.

The Institute for Fisheries Resources is working with the NOAA Restoration Center to restore the natural reef habitat of the native San Francisco Bay oyster on a portion of intertidal bayland in San Mateo County. This project took the Department of Fish and Game's work in the 1980's a few steps further by demonstrating that native oysters have survived and can successfully spawn in the Bay, and that the restoration of reef habitats in the Bay involving colonies of native oysters and associated shellfish, is feasible. First, the genetic nature of the oysters discovered in Westpoint Slough will be compared with oyster material excavated from the nearby Belmont Mound Indian midden to establish whether the Westpoint Slough oysters are suitable broodstock for the native oyster project. Broodstock oysters will then be spawned under alternative conditions at the site and then monitored for growth and survival of juveniles. This will establish the most effective means of promoting the recovery of a self-sustaining native oyster population.
The results of this projects may be incorporated into a final native oyster population and habitat restoration strategy to restore oyster populations in San Francisco Bay.